

REMARKS/ARGUMENTS

Claims 1-17 and 27-38 are pending and are not amended in this Response. All claims were rejected in the Office Action. The Applicants respectfully submit, for the reasons below, that these claims are allowable.

Double Patenting

The Applicant's note the provisional obviousness-type double patenting rejection made in the Office Action. The Applicants will respond to this rejection when claims of either Application No. 10/377,647 or 10/641,687 are allowed.

Claim Rejections

Claims 1-15 and 27-37 were rejected as being obvious over Smith '479 and Applicants' alleged admission of prior art. The Applicants respectfully traverse this rejection and submit that the claims are allowable.

Regarding claims 1 and 27, the Office Action acknowledges that Smith does not expressly teach performing a combination of first chemical cleanings and chemical cleaning events in the manner claimed. However, the Office Action alleges that pages 1-3, especially page 2, lines 6-7, of Applicants' specification teach such a combination. Page 2, lines 6-7 refer to a combination of "periodic regular cleaning" and "intensive recovery cleaning". Periodic regular cleaning is then further described on page 2, lines 8-19 as backwashing the membranes with air or water under pressure to physically push solids off the membranes. Accordingly, a physical, not chemical, method is described. There is no description in either Smith '479 or Applicants' description of prior art of a combination of steps as claimed. Further, claim 1 also refers to the cleaning events being generally periodic in the sense of having a frequency of at least once a week. The Office Action states that periodic cleaning is discussed in Column 1, lines 6-31 of Smith. However, the only reference to periodic cleaning in that passage is to a cleaning process used with "inside-out flow", to which the

"outside-in" fibers of Smith are in contrast. Further, cleaning in Smith is triggered by a loss in membrane permeability which does not result in cleaning that is periodic in the sense of having a frequency.

Regarding claim 5, the Applicants repeat their previous submissions which are, in summary, that the pulsed flow in Smith is not as provided by claim 5 and that the other references to soak periods and blocking the flow of solution are not taught in Smith as being part of the pulsing process in a way that results in the invention of claim 5. Regarding the newly added matter, the Office Action states that chemical cleaner in Smith would remain in the header or flow in a reverse direction through the headers, as described at column 11, lines 22-60. However, claim 5 states that all chemical cleaner reaching the headers remains in the enclosed space of the module or flows out through the membranes. Smith, column 4, lines 22-60, refers to recycling cleaning fluid through the lumens (column 11, lines 25-27). In Smith '479, recycling refers to the flow of cleaning fluid from a chemical tank into one header, through the fibers, out the other header, and back to the chemical tank. Accordingly, all cleaning fluid does not remain in the enclosed space of the module or flow through the membrane walls. Instead, a substantial portion of the cleaning fluid flows back out of the enclosed space of the module, without passing through the membranes, to be recycled to the chemical tank. Accordingly, Smith does not provide all of the elements of claim 5. For these reasons, and the reasons previously submitted, the Applicants submit that claim 5, and all of its dependents, are not obvious.

Claims 16, 17 and 38 were rejected as being obvious of Smith '479 in view of Applicants' alleged admission of prior art and Kawanishi '988. It is critical to the rejection that Kawanishi '988 disclose draining a tank after cleaning at Column 1, line 48-63. However, these lines do not describe draining the tank after cleaning. Instead, these lines merely describe how, in a prior art method, unreacted chemical cleaner may remain in the filtrate passages, meaning the insides, of the membranes. This retained chemical is said to "come out along with the filtrate

when a filtering operation is resumed". This is further said to result in contamination of the filtrate. Accordingly, the cited reference refers to removal of chemical from the insides of the membranes by permeation through the membranes. The cited reference does not teach draining a tank after cleaning. Accordingly, claim 16, 17 and 18 are not obvious.

For the reasons above, the Applicants submit that the claims are allowable.

Respectfully submitted,

RABIE et al

By 

Scott R. Pundsack
Reg. No. 47,330
Tel: (416) 957-1698